

PUBLIC VERSION

**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

FRANK CARBONE, ANDREW CORZO,
SAVANNAH ROSE EKLUND, SIA HENRY,
ALEXANDER LEO-GUERRA, MICHAEL
MAERLANDER, BRANDON PIYEVSKY, KARA
SAFFRIN, and BRITTANY TATIANA WEAVER,
individually and on behalf of all others similarly
situated,

Plaintiffs,

v.

BROWN UNIVERSITY, CALIFORNIA
INSTITUTE OF TECHNOLOGY, UNIVERSITY
OF CHICAGO, THE TRUSTEES OF COLUMBIA
UNIVERSITY IN THE CITY OF NEW YORK,
CORNELL UNIVERSITY, TRUSTEES OF
DARTMOUTH COLLEGE, DUKE UNIVERSITY,
EMORY UNIVERSITY, GEORGETOWN
UNIVERSITY, THE JOHNS HOPKINS
UNIVERSITY, MASSACHUSETTS INSTITUTE
OF TECHNOLOGY, NORTHWESTERN
UNIVERSITY, UNIVERSITY OF NOTRE DAME
DU LAC, THE TRUSTEES OF THE UNIVERSITY
OF PENNSYLVANIA, WILLIAM MARSH RICE
UNIVERSITY, VANDERBILT UNIVERSITY, and
YALE UNIVERSITY,

Defendants.

Case No. 1:22-cv-00125

Judge Matthew F. Kennelly

DEFENDANTS' MOTION TO EXCLUDE EXPERT TESTIMONY AND OPINIONS OF

HAL SINGER, GEORGE BULMAN, AND ELIZABETH MORA

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Name	Description	School
Peter Ammon	Chief Investment Officer; Defendants' Expert	University of Pennsylvania
George Bulman	Plaintiffs' Expert	n/a
Diane Corbett	Former Director and Executive Director of Financial Aid	Cornell University
John DeGioia	Former University President (2001-2024)	Georgetown University
Kim Downs-Burns	Vice President for Student Financial Services and Institute Enrollment; Former Associate Vice President for Student Financial Services and Director of Student Financial Services	Middlebury College
Nicholas Hill	Defendants' Expert	n/a
Bridget Terry Long	Defendants' Expert	n/a
Becky Maxson	Deputy Director for Compliance and Policy; Former Associate Director and Financial Aid Counselor	Cornell University
Elizabeth Mora	Plaintiffs' Expert	n/a
Benjamin Shumate	Named Plaintiff	n/a
Hal Singer	Plaintiffs' Expert	n/a
Lauren Stiroh	Defendants' Expert	n/a
Brent Tener	Executive Director of Student Financial Aid and Scholarships; Former Director of Undergraduate Scholarships, Associate Director of Undergraduate Scholarships, and Financial Aid Officer	Vanderbilt University
Kathryn Tuman	Former Executive Director of Financial Aid at Columbia University and Assistant Director of Student Aid, Teacher's College, Columbia University	Columbia University
Elaine Varas	Senior University Director of Student Financial Aid	University of Pennsylvania
David Yermack	Defendants' Expert	n/a

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1	Rebuttal Report of Bridget Terry Long (Aug. 7, 2024)
2	Rebuttal Report of Nicholas Hill (Aug. 7, 2024)
3	Excerpted Deposition Transcript of Kathryn Tuman (Sept. 8, 2023)
4	Excerpted Deposition Transcript of Diane Corbett (Jan. 8, 2024)
5	Excerpted Deposition Transcript of John DeGioia (Feb. 16, 2024)
6	Excerpted Deposition Transcript of Elaine Varas as 30(b)(6) representative of The Trustees of the University of Pennsylvania (Mar. 18, 2024)
7	Excerpted Deposition Transcript of Becky Maxson (Nov. 17, 2023)
8	Excerpted Deposition Transcript of Brent Tener (July 12, 2023)
9	Excerpted Deposition Transcript of Hal Singer (Nov. 27, 2024)
10	Amended Report of Hal Singer (May 14, 2024)
11	Excerpted Deposition Transcript of Elizabeth Mora (Oct. 29, 2024)
12	Excerpted Deposition Transcript of Benjamin Shumate (Sept. 12, 2023)
13	SHUMATE 00000001
14	SHUMATE 00000007
15	SHUMATE 00000009
16	Rebuttal Report of Hal Singer (Oct. 7, 2024)
17	Joshua D. Angrist and Jörn-Steffen Pischke, Mostly Harmless Econometrics: An Empiricist's Companion (Princeton University Press, 2008) §2.1
18	ABA, Proving Antitrust Damages: Legal and Economic Issues, 3rd ed. (Chicago: American Bar Association, Section of Antitrust Law, 2017) §6(2)(A)
19	Excerpts of Surrebuttal Report of Nicholas Hill (Nov. 1, 2024)
20	Columbia 00015333
21	"GSP Program History," captured on December 13, 2024, available at https://gsp.georgetown.edu/about/gsp-program-history/
22	Cornell Chronicle article titled "Cornell Drops Need-Based Loans for Students from Families Earning Under \$75,000," from January 31, 2008
23	DARTMOUTH 0000359371
24	COFHE-02-00002603
25	Excerpts of the Surrebuttal Report of Lauren J. Stiroh (Nov. 1, 2024)
26	Supplemental Rebuttal Report of Hal Singer (Nov. 11, 2024)
27	Excerpts of the Rebuttal Report of Lauren J. Stiroh (Aug. 7, 2024)
28	Excerpted Deposition Transcript of Kim Down-Burns (Mar. 5, 2024)
29	PENN568-LIT-00162887
30	Winston, Subsidies, Hierarchy and Peers: The Awkward Economics of Higher Education, 13 J. Higher Educ. 13, 27 (Winter 1999)
31	U.S. News & World Report article titled "15 National Universities With The Biggest Endowments" from October 2, 2023
32	Emory 568Lit 0058886
33	PENN568-LIT-00089925

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Exhibit No.	Description
34	The New York Times Magazine article titled “The Top U.S. Colleges With The Greatest Economic Diversity,” from September 7, 2023
35	Report of George Bulman (May 14, 2024)
36	Excerpted Deposition Transcript of George Bulman (Nov. 4, 2024)
37	Rebuttal Report of George Bulman (Oct. 7, 2024)
38	“The Effect of College and University Endowments on Financial Aid, Admissions, and Student Composition,” dated August 2022 by George Bulman
39	Excerpts of the Rebuttal Report of David L. Yermack (Aug. 7, 2024)
40	Excerpted Deposition Transcript of Peter Ammon (Oct. 25, 2024)
41	Report of Elizabeth Mora (May 14, 2024)
42	Rebuttal Report of Elizabeth Mora (Oct. 7, 2024)

INTRODUCTION

Plaintiffs alleged that defendants participated in a “price-fixing cartel” “designed to . . . eliminate financial aid as a locus of competition” and “artificially inflate[] the net price of attendance for students receiving financial aid.” Second Am. Compl. (“Compl.”) ¶1. The mechanism for this outcome was supposedly the 568 Group’s “Consensus Methodology,” which plaintiffs defined as a “common formula for determining an applicant’s ability to pay,” *id.* ¶5, also known as the “Expected Family Contribution.” This common “EFC” formula was purportedly developed by members of the 568 Group, a group of private universities and liberal arts colleges. *Id.*

After years of discovery, more than 100 depositions, and millions of pages of documents spanning decades, plaintiffs have no evidence to support these theories. Instead, the undisputed record shows that the “net price” of attendance (i.e., the actual price students pay) was not inflated—it declined. Ex. 1, Long Rebuttal figs. 4, 5. Financial aid for the putative class members increased exponentially. *Id.* fig. 3; Ex. 2, Hill Rebuttal fig. 7. And there was no common EFC “formula.” The supposed “price-fixing cartel” was actually a repository for sharing diverse ideas and practices on how to award *more* aid to students, Ex. 3, Tuman Tr. 94:12-24, 95:7-19; Ex. 4, Corbett Tr. 110:17-111:3; Ex. 5, DeGioia Tr. 181:10-182:11, a mission the schools accomplished, Ex. 6, Varas Tr. 218:20-220:03; Ex. 7, Maxson Tr. 263:14-24; Ex. 8, Tener Tr. 76:9-23.¹

This record required plaintiffs’ experts to scramble and resort to junk science. Start with the remarkable concessions and maneuvering that plaintiffs’ lead expert, Hal Singer, had to make to offer an opinion that in some way supported the existence of classwide anticompetitive effects. The supposed common EFC formula was completely abandoned—Singer acknowledged the 568

¹ Unless otherwise noted, “Ex.” refers to the exhibits to the Gringer Declaration filed herewith, emphasis is added, and objections are omitted for deposition citations.

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Group *never* developed a “formula that [schools] should use.” Ex. 9, Singer Tr. 20:2-21:8. In its place came a nebulous “set of principles” about financial aid goals that existed before and after the 568 Group, operated in “broad strokes,” mandated no particular practice or formula, *id.* 19:19-20:1, and failed to produce anything resembling a common impact.

Unable to show inflation of net price, Singer then invented a measure called “Effective Institutional Price” that does not represent the amount students paid and disregards large amounts of aid students received. Ex. 10, Singer Am. Rep. ¶6. And *still* he could argue for an overcharge only by playing fast and loose with the data, most notably by ignoring the students who received the most aid and by pretending the University of Chicago ceased to exist in 2016.

Singer has repeatedly been the subject of successful *Daubert* motions because of his “ends justify the means” approach to expert work. He fares no better—and in many ways worse—here. And that is before one considers his more than 80 pages of lay recitation of a slanted view of the record—necessary for plaintiffs given the absence of witnesses who support their case. Singer’s impact and damages analysis is fundamentally unreliable and should be excluded, as should his lay factual recitation of the record, his attempted mind-reading of defendants, his incoherent opinion that the conspiracy encompassed aid packaging, and his misleading opinions on market definition.

Plaintiffs’ other experts speak to subjects far afield from this case and their analyses are unreliable to boot. Santa Cruz Professor George Bulman primarily reads into the record the size of defendants’ endowments. This is not appropriate expert testimony. Bulman then opines that endowment returns and financial aid were correlated before the challenged conduct was implemented and that the relationship stopped after. This is meaningless, and Bulman’s work is unreliable. Indeed, when one employs the methodology that Bulman used to analyze the same issue in

his academic work, his findings evaporate.

Finally, there is the puzzling case of Elizabeth Mora. Mora last worked in higher education 16 years ago. Ex. 11, Mora Tr. 243:8-244:24. She opines that Harvard (not a defendant) is sort of like a corporation and that, based on conversations with unspecified individuals who ostensibly worked elsewhere, defendants might be too. *Id.* 53:17-56:18, 57:12-58:4. It is unclear what the point of this testimony was supposed to be, but Mora's opinions are unreliable. She offers no methodology, looks at no data, and admittedly lacks expertise in corporate governance.

For these reasons and those set forth below, the opinions and testimony of Singer, Bulman, and Mora should be excluded in full pursuant to the familiar *Daubert* and Rule 702 standards.

I. Singer's Opinions And Testimony Result From Pre-Determined Outcomes, Not Evidence Or A Reliable Methodology

Singer started with the conclusions plaintiffs asked him to reach, then worked backwards to develop "models" that produced the desired results. To do so, he employed baseless assumptions, manipulated statistical measures to conceal fatal defects in his methodology, and excluded evidence that undermined his pre-determined results. None of this constitutes reliable analysis that would be helpful to the jury. That is nothing new for Singer, whose opinions—in particular those involving regressions and overcharges—have repeatedly been excluded by federal courts on the basis of similar flaws. *See, e.g., Conrad v. Jimmy John's Franchise, LLC*, 2021 WL 718320, at *16 (S.D. Ill. Feb. 24, 2021); *In re Google Play Store Antitrust Litig.*, 2023 WL 5532128, at *9 (N.D. Cal. Aug. 28, 2023); *Kamakahi v. Am. Soc'y for Reproductive Med.*, 305 F.R.D. 164, 179-82 (N.D. Cal. 2015); *In re Foreign Exchange Benchmark Rates Antitrust Litig.*, 2022 WL 11809467, at *2 (S.D.N.Y. Oct. 20, 2022).

Singer's opinions rely heavily on a regression analysis that epitomizes junk science. The analysis attempts to show participation in the 568 Group led to students being uniformly

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overcharged by reference to a made-up, irrelevant measurement that Singer calls “Effective Institutional Price” or “EIP.” The regression reaches its result, however, only by working in reverse. It assumes the existence of uniform group conduct and common impact on all class members, then derives from that assumption a single uniform overcharge for every student, regardless of their disparate financial circumstances—without ever providing a reliable method for determining *whether* there is common conduct or impact in the first place. Singer then uses that defective regression for an “in-sample prediction analysis” to try to identify harmed members of the putative class. But that analysis too was designed without any methodology beyond ensuring the desired result. Singer compounded these flaws by opportunistically excluding data from his regression, including data from the students who paid the least, because they received more than 95% of their cost-of-attendance in grant aid; excluding any data from 568 Group members that are not named defendants, even though 568 Group membership is supposedly the defining characteristic of the unlawful conduct; and excluding almost a decade of data from the University of Chicago. Only by these errors and omissions (among others) can Singer even suggest an overcharge.

The analysis beyond Singer’s regression is no more reliable or helpful to the jury. Singer performs roles that have nothing to do with his claimed expertise, often reciting cherry-picked record evidence with no economic analysis whatsoever. He improperly opines on defendants’ state of mind, where he again has no special expertise. And he says that the challenged conduct included an agreement on how institutions “packaged” loans and grants in financial aid offers—but that opinion too relies on cherry-picked evidence and (as he conceded) is wrong.

Finally, Singer’s market definition has no basis in reality. He touts what he says is the correct methodology to define the market, but immediately disregards it when the results do not align with plaintiffs’ case. That requires him to ignore his own revealed-preference analysis; vast

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amounts of data that there is no reason to discard (while including comparable data that more conveniently supports his argument); and copious record evidence regarding not only how defendants identify relevant competitors, but how applicants themselves choose what schools to attend.

These dispositive defects render Singer’s opinions junk science, beyond the scope of his expertise, or both. The Court should grant the motion, excluding his reports and testimony in full.

A. Singer’s Injury And Damages Models Are Inadmissible Junk Science Lacking Any Basis In The Record Or Accepted Econometrics

1. Singer’s Effective Institutional Price Calculation Should Be Excluded Because It Is Irrelevant

Singer’s faulty regression model is irrelevant and unhelpful because it measures an overcharge on what Singer calls EIP—an invented metric that no one pays. Singer (alone) defines EIP as the “cost of attendance remaining after subtracting any institutional grant aid,” which is “any need-based financial grant or scholarship aid” given by the university that students need not repay. Singer Am. Rep. ¶3. As Singer acknowledges, the price students pay is the statutorily defined “net price.” *Id.* ¶6. Saying that students are overcharged based on EIP is like saying the loser of a baseball game won because they scored the most “effective runs.” It means nothing.

To start, Singer concedes that EIP “is a measure I came up with.” Singer Tr. 282:18-283:8. No document Singer reviewed or has seen, and no higher education institution, uses EIP. *Id.* 291:5-18; 295:23-296:20. Critically, EIP is almost invariably higher than the “net price” students paid. Singer Am. Rep. ¶6. EIP omits sources of aid and assistance that defendants and third parties provided to students to reduce the price of attending defendant-schools, including work study, merit-based aid, subsidized loans, and scholarships or aid from federal or state governments, non-profits, and other sources. *See* Singer Tr. 283:9-13, 289:25-290:3, 292:23-293:1; *see also* Singer Am. Rep. ¶6. For example, if a student paid \$28,000 after receiving \$2,000 in merit aid, Singer’s regression will calculate an EIP of \$30,000. Singer Tr. 288:10-22. As such, an increase in EIP

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says nothing about whether any student *actually* paid an “overcharge” as “measured by the difference between the price paid and what the market or fair price would have been.” *Hanover Shoe, Inc. v. United Shoe Mach. Corp.*, 392 U.S. 481, 489 (1968). EIP—by design and by definition—is irrelevant to the *overcharge* case plaintiffs must prove, and Singer’s EIP overcharge opinions should be excluded on that basis alone. *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 591 (1993) (“Expert testimony which does not relate to any issue in the case is not relevant.”).

2. Singer’s Regression Is Unreliable Because It Selectively Omits And Includes Data To Reach Plaintiffs’ Desired Result

Singer’s regression should also be excluded because “there is simply too great an analytical gap between the data and the opinion proffered.” *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997). Rather than incorporate all relevant data, Singer canvassed the record to find only the numbers that produce an overcharge when fed into his model and discarded the rest. These opportunistic omissions are significant and pervasive—he has dropped hundreds of thousands of datapoints that would directly undermine his conclusions, including more than 83,000 observations of the students who received the largest amounts of financial aid. Thus, selection bias and cherry-picking pervade his analysis, rendering it unreliable. *See, e.g., In re Paraquat Prods. Liability Litig.*, 730 F. Supp. 3d 793, 842 (S.D. Ill. 2024) (excluding expert testimony where “analysis reveals extensive selection bias”); *Malden Transp., Inc. v. Uber Techs., Inc.*, 404 F. Supp. 3d 404, 423 (D. Mass. 2019) (“cherry-picking of data [] renders his regression models unreliable”); Hill Rebuttal ¶81, n.106.

First, Singer excludes students whose institutional grant aid covered more than 95% of the cost of attendance (i.e., full or nearly full ride students). Singer Am. Rep. ¶246. This amounts to more than 83,000 observations across more than 40,000 students. These are the students to whom defendants were most generous with aid and removing them materially skews the resulting

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analysis. Hill Rebuttal ¶¶81, 234, n.106. Singer, moreover, has no economic basis for discarding this data. Because, on plaintiffs’ theory, the financial aid determinations for these students were affected by the challenged conduct, they are plainly relevant to impact. *Id.*

Singer asserts only that he omitted such students “[b]ecause they are not members of the class.” Singer Tr. 201:19-24. Even if this were true (it is not), that is not a valid basis to exclude them from a regression designed to measure *whether* defendants overcharged students due to the challenged conduct. To answer that question, all students receiving grant aid matter. A valid overcharge estimate must allow for the possibility that the challenged conduct increased the number of full rides given by colleges and not, as Singer does, simply exclude full rides by assuming that the conduct had to decrease financial aid. Hill Rebuttal ¶¶234-238. And even if excluding students because they are not class members were valid, Singer inexplicably excludes students whose aid covers more than 95% of the cost of attendance when the class only excludes students who received full rides. Singer admits, moreover, that his model does (when helpful to him) consider non-class members like Yale students from 2008 to 2016. Singer Tr. 207:6-208:7. Faced with that contradiction, Singer concedes that being a member of the class is in fact “not the criteria for getting in[to the data sample]. The criteria for getting into the sample was whether you’re a full ride tuition . . . or not.” *Id.* Such circular and contradictory reasoning cannot justify excluding relevant data.

Ignoring this data significantly undermines the reliability of Singer’s model. A student who received financial aid covering more than 95% of their cost of attendance for some (but not all) of the years they attended a defendant institution has their data excluded only in the years the school was most generous to them. That skews the results in plaintiffs’ favor.

Excluding this data is especially problematic for students who first received qualifying aid

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after their first year and attended a school that joined the 568 Group while they were students. In that case, the students' data is included during the non-conduct period (when they did not have 95% or more of their cost of attendance covered) to set a "benchmark" but excluded during the conduct period (when they did receive such aid). Hill Rebuttal ¶236. Excluding the full or nearly full ride students during the conduct period necessarily increases the average EIP at schools engaging in the challenged conduct. But Singer's model has no way of attributing that to the omission of relevant data and will instead erroneously attribute all the increase in average EIP to the challenged conduct. *Id.*

Singer asserts this "may never happen" because his "understanding is that the schools tend to be the most generous in the first year" and "get less generous over time." Singer Tr. 211:19-212:17. He provides no basis for that "understanding" and it is wrong: Plaintiff Benjamin Shumate, for example, received more need-based financial aid from Brown in his third and fourth year than he did in his first year. *See* Ex. 12, Shumate Tr. 210:19-211:25, 231:2-10, Ex. 13, SHUMATE_00000001; Ex. 14, SHUMATE_00000007; Ex. 15, SHUMATE_00000009 (all showing Shumate received more need-based financial aid from Brown in his junior and senior years than in his freshman year). Structured data produced to plaintiffs also shows that, for example, more than 14,000 students at Penn alone received more institutional need-based grant aid after the first year, even when adjusted for inflation.²

Second, Singer excludes data from non-defendant 568 Group members. Singer Tr. 29:17-25. He does so even though he claims that the "price effects" are "most reliably measured" by

² This data can be produced to Chambers on request. Notably, the primary variant of Singer's own regression, specification (6), finds that a student's EIP goes down after the first year, as shown by the negative coefficient in his "Year in College" variable. Singer Am. Rep. tbl. 11; Singer Rebuttal tbl. 6.

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considering all such schools. Ex. 16, Singer Rebuttal ¶75. There are many such schools with publicly available data Singer could have analyzed (including liberal arts colleges) and the structured data for six non-defendant 568 Group schools was produced. But Singer just had no idea these schools were in the Group. Singer Tr. 33:6-34:6. That oversight is especially notable because Singer argues “the key feature of the Challenged Conduct . . . that bound Defendants together” is “[m]embership in the 568 Group,” and therefore “exposure to the Challenged Conduct [] did not vary by school or year.” Singer Rebuttal ¶¶93, 95. If that is true, all 568 Group members are necessarily relevant to measuring the effect of the challenged conduct on prices—and omitting them results in an unrepresentative sample of 568 Group members, introducing selection bias. *See* Ex. 17, Angrist and Pischke, *Mostly Harmless Econometrics: An Empiricist’s Companion* (2008), §§ 2.1, 2.2 (describing improper selection of data as “the most important problem that arises in empirical research”); *see also Zenith Elecs. Corp. v. WH-TV Broad. Corp.*, 395 F.3d 416, 418-20 (7th Cir. 2005) (affirming exclusion of expert opinion on sales growth because data to estimate sales growth through regression was available and not used). Singer understands the significance of including available data from 568 Group members, Singer Tr. 31:9-32:1, but, for no scientific reason, failed to do so.

Third, Singer omits 2016-2023 data from the University of Chicago because it “substantially biases my conduct coefficient downwards.” Singer Rebuttal ¶113. That is, if Singer included the data it would have substantially *reduced* his average overcharge. He is right that it would have, but the fact that including available data substantially changes the results of his regression is not a justification for omitting the data—it is a reason to reject the model. That is particularly true when, as here, the absence of those students’ data is pivotal to finding an effect.

Singer responds only that the data is “unreliable” “due to database inconsistencies.” Singer

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Rebuttal ¶112. But these inconsistencies are just his theory falling apart. The data shows a substantial increase in EIP between 2015 and 2016, and then again between 2021 and 2022, with the former coinciding with when the University of Chicago left the 568 Group. Singer Rebuttal fig. 1. Because leaving the Group and instituting higher prices contradicts plaintiffs’ theory of the case, Singer pronounces that there are “*misreported* higher real [EIPs]” in “periods that a Defendant did not participate in the Challenged Conduct.” Singer Rebuttal ¶112. He bases that pronouncement on *nothing* in the record. And an increase in EIP is no basis for concluding data was misreported; indeed, Singer admitted that this increase is smaller than other increases in EIP in data he did not discard (also for no reason). Singer Tr. 141:19-142:11. In any event, Singer’s explanation is pure *ipse dixit*: he has no basis to conclude that the post-2015 EIPs are “misreported” higher prices, rather than (for example) the pre-2015 prices being misreported *lower* prices. As he admitted, Singer simply “assum[es] that [pre-2015 University of Chicago data] is accurate” Singer Tr. 127:13-130:2. The reason: because it “is more attractive,” insofar as it “gives the model an opportunity to find an effect.” Singer Tr.130:18-132:19.

Singer’s unreasoned decision to exclude the post-2015 University of Chicago data affects the results of his model by more than 70%. Singer Rebuttal ¶113. The sensitivity of Singer’s regression results to the inclusion of this data further demonstrates the unreliability of his model because “econometric results typically should not change materially with minor changes to the data.” Ex. 18, American Bar Association, *Proving Antitrust Damages: Legal and Economic Issues* (2017), § II.6.A. “[S]ensitivity analysis is a well-accepted method of determining the reliability of a regression model”—and Singer’s model repeatedly fails such tests. *EEOC v. DHL Express (USA), Inc.*, 2016 WL 5796890, at *7 (N.D. Ill. Sept. 30, 2016); *see also* Ex. 19, Hill Surrebuttal §§ 6.2, 6.3, App’x B.3.

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Finally, Singer includes fundamentally unreliable data. Singer looks at 2023-2024 and 2024-2025 academic year data as evidence of a “clean” benchmark period. However, the 2024-2025 data includes only four defendants (Cornell, Georgetown, Johns Hopkins, and Penn), and that data is incomplete, containing estimates of students’ non-final early decision and early applicant awards, and even then just a single student from Penn. Hill Rebuttal ¶225. Singer was unaware of these defects. Singer Tr. 152:8-23. The data Singer used for the 2023-2024 school year is likewise incomplete: According to Singer’s dataset, six defendants report no paid financial aid awards at all; Caltech reports only about ¼ as many institutional aid awards as in 2022; and [REDACTED]. Hill Rebuttal ¶225.

Singer’s only reason for including this unreliable data is that he is “extremely loath[] to get rid of the few sources of data that would allow us to estimate the effect.” Singer Tr. 153:11-25. Said differently, Singer needs this data because his model showing statistically significant overcharges collapses without it. Hill Rebuttal ¶226, fig. 39; Hill Surrebuttal ¶¶50, 55, fig. 8. But that a model can “estimate the effect” only by including incomplete, deeply flawed, and unreliable data is not a reason for including the data. It means Singer does not have “sufficient data to employ the [chosen] methodology.” *Manpower, Inc. v. Ins. Co. of Pa.*, 732 F.3d 796, 808 (7th Cir. 2013).

These are problems of Singer’s own making. Given Singer’s “‘before-after’ multiple regression methodology,” Singer Rebuttal ¶71, he must have data from “clean” periods free of the challenged conduct, Singer Am. Rep. ¶227. So, he uses “the full complement of benchmark data available”—including deeply flawed 2023-2024 and 2024-2025 academic year data—because by design his model can estimate an effect only by including it: “to throw out one of these precious few clean periods is doing a lot of harm in the sense that it’s depriving the model of having any chance of finding an effect.” Singer Tr. 152:24-153:10. But this predicament was a choice: when

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asked whether “there [are] other methods besides the before, during and after” model Singer employed “that economists can use to estimate an overcharge” he answered “Sure.” Singer Tr. 69:8-18. Singer decided not to use those models, and instead designed a model for which he did not have the necessary data. That is not a reliable scientific methodology.

3. Singer’s Regression Imposes Common Impact Rather Than Testing For It, And Is Otherwise Based On Unreliable Methods

Singer’s regression model produces plaintiffs’ desired result only by assuming that each defendant engaged in the challenged conduct in the exact same way, without change, over the entire period he analyzed. Singer Rebuttal ¶74. Despite defining the challenged conduct as comprising six distinct “components,” Singer Am. Rep. ¶4, Singer’s regression calculates a single, uniform “overcharge” for all defendants by using “a single conduct variable across all Defendants and academic years.” Singer Rebuttal ¶74; Singer Tr. 253:17-254:5. The value of that variable is zero or one depending only on whether the defendant school was a member of the 568 Group that year, rather than any analysis of any school’s actual practices or whether or how any school engaged in the challenged conduct’s six components. Singer Tr. 189:11-190:25; Singer Am. Rep. ¶238. Singer just baselessly assumes that the challenged conduct was identical both as between all 17 defendant schools and across the entirety of the almost 20-year conduct period. He concedes this assumption is necessary to “produce a single, common overcharge.” Singer Rebuttal ¶74.

Singer’s assumption is implausible because the challenged conduct differed between defendants and changed over time. *See, e.g.*, Singer Tr. 48:11-49:2 (conceding Penn and Columbia adopted no-loan policies when other members did not). That means Singer’s model is necessarily unreliable because it *cannot* determine whether there were different overcharges for proposed class members that attended different schools at different times. *Id.* 61:12-62:13 (conceding model “couldn’t get at these alternative hypotheses”). Rather, his model forces a finding of common

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impact. Such a rigged analysis provides nothing of value to the jury and must be excluded.

First, the conduct changed over time. Schools constantly changed how they calculated “expected family contribution” (“EFC,” or “what [schools] believe families can pay,” Singer Am. Rep. ¶28): For example, in 2005, Yale eliminated parental contributions for families earning less than \$45,000 per year and in 2007, Duke instituted a policy that families with incomes less than \$60,000 would not be expected to contribute at all.³ Schools also changed their approaches to packaging aid over time: In 2004, Georgetown adopted policies to replace loans with grants for certain students and in 2008, Cornell eliminated loans for certain students as well.⁴ Many Group members also adopted complete “no-loan policies,” committing not to use loans at all in packaging aid (Columbia in 2008, Penn and Vanderbilt in 2009, Northwestern in 2016, MIT in 2017, and Dartmouth and Rice in 2022). Long Rebuttal fig. 6, App’x D.

The CM Guidelines were also updated and revised throughout the conduct period. *See* Singer Am. Rep. ¶156; Singer Tr. 184:11-19 (conceding “that there were refinements to the CM over time”). In 2005, the CM Guidelines changed the recommended cap on the amount of home equity to consider when calculating EFC, from 2.4 times parental income less mortgage debt to 1.2 times, benefitting many students.⁵ Changes like these matter—a family with \$240,000 in home equity and \$100,000 of income per year went from having all \$240,000 of home equity considered as part of their financial strength to having only *half* of that equity considered. Singer’s regression

³ Ex. 20, Columbia_00015333 (“Peer School Financial Aid: Initiatives”).

⁴ Ex. 21, GSP Program History, <https://gsp.georgetown.edu/about/gsp-program-history/>; Ex. 22, Cornell Drops Need-Based Loans for Students from Families Earning Under \$75,000, <https://news.cornell.edu/stories/2008/01/cornell-announces-sweeping-new-financial-aid-program>.

⁵ Ex. 23, DARTMOUTH_0000359371 (“Membership Dues in Support of The 568 Presidents’ Group for FY 2006 and 2007,” 568 Presidents’ Group, November 28, 2005) at 375; Ex. 24, COFHE-02-00002603 (“Report of the Common Standards Subcommittee to the 568 Presidents’ Working Group,” Consortium on Financing Higher Education, June 2001) at 612-613.

makes no effort to account for this variance.

Second, the conduct varied by defendant. While plaintiffs alleged the CM Guidelines were a “common formula for determining an applicant’s ability to pay,” Compl. ¶5, Singer conceded they are not a common self-executing formula, Singer Tr. 19:19-21:8. And because individual schools implemented them differently, Singer Am. Rep. ¶153, schools’ approaches to determining EFC were not “identically the same,” Singer Tr. 16:4-18. In fact, defendants’ EFCs varied substantially even for the same student. Hill Rebuttal figs. 14, 15, 17, 18. But Singer chose not to even try to assess what “formula” any school used, let alone compare formulas across schools, falsely claiming that defendants did not produce their needs assessment methodologies. Singer Tr. 17:6-17. For example, look again to caps on home equity: notwithstanding the CM Guidelines, some defendants did not consider home equity at all (e.g., MIT); others did not cap consideration of home equity (Notre Dame, Northwestern); and still others capped consideration above or below the recommended cap (Penn, Vanderbilt, Rice, Brown, Emory). *See* Long Rebuttal tbls. D.1, D.8, D.11-16. These differences—which Singer again assumes away and never accounts for in his regression—necessarily affect the impact of the challenged conduct and any potential overcharge.

In the face of this extensive record evidence, Singer can only implausibly claim that “we don’t have an *a priori* basis in the record for why the effect would vary from one year to the next” or from defendant to defendant. Singer Tr. 252:13-253:16. That is wrong many times over. *Supra*, at 12-14. These changes may be inconvenient for Singer and preclude plaintiffs’ theory of common impact, but a reliable methodology must account for them. Singer’s does not. Thus, it is extremely significant that even using Singer’s approach, Singer’s model modified to allow variation by defendant produces no overcharge at all for students who attended certain defendant schools (e.g., Penn, Notre Dame, Georgetown). *See* Ex. 25, Stiroh Surrebuttal figs. S.4.2, S4.3.

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As a result, a model imposing a single class-wide overcharge across two decades, thousands of students, and 17 schools is necessarily unreliable. Singer could have tested whether challenged conduct that varied over time and by defendant produced a common impact, by incorporating defendant- and time-specific variables into his regressions. Singer Tr. 61:12-62:13 (conceding he “didn’t test other theories” like conduct “that affected four schools” though “one could go do that”). That would allow him to test when, if at all, specific defendants overcharged students, and whether the impact on class members was common. But doing so would have shown no common impact. *See* Stiroh Surrebuttal figs. S4.2, S4.3, and S4.4. Achieving a desired conclusion by adopting “unwarranted or implausible” assumptions, *Rossi v. Groft*, 2013 WL 1632065, at *2 (N.D. Ill. April 16, 2013), “belied by the evidence,” *In re Disposable Contact Lens Antitrust Litig.*, 329 F.R.D. 336, 360 (M.D. Fla. 2018), is junk science.

Singer’s regression involving EFCs should also be excluded for the same reasons. Singer did not conduct any statistical analysis of EFCs in his opening report, Singer Tr. 18:18-25, likely because the data showed large variation among defendants, which is (to put it mildly) inconsistent with plaintiffs’ case. In response to defendants’ experts’ analysis of those issues, Singer repurposed his EIP regression in his rebuttal report, applying it to EFCs. Other than replacing “EIP” with “EFC” as the dependent variable, the models (and flaws) are the same. Singer Rebuttal ¶44.

4. Singer’s In-Sample Prediction Analysis Is Unreliable, Cannot Demonstrate Common Impact, And Must Be Excluded

Singer’s regression model does not, by itself, even purport to show that all or nearly all class members were impacted. To show *that*, Singer performs his “in-sample” prediction and his related “harmed-on-net” analyses. Both concededly build on the results of his (flawed) regression, Singer Rebuttal ¶¶225, 234; Singer Am. Rep. ¶¶253, 255; Singer Tr. 315:8-316:22, and so should be excluded for the reasons already described. But these analyses are unreliable on their own terms

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and cannot demonstrate common impact.

The in-sample prediction analysis has three steps. First, Singer calculates a uniform overcharge across students using specification 6 of his regression, which according to him controls for the most variables, including student fixed effects. Singer Am. Rep. tbl. 11; ¶¶245, 255-261.⁶ Second, for each class observation (i.e., each student-year, meaning a student who was in school and received aid for four years would have four “observations”) he calculates a “but-for” price using the same regression model with the challenged conduct variable set to “0.” And third, Singer compares the EIP he assigns to the student to the “but-for” EIP specification 6 of his regression model predicts the student *should* have “paid.” Singer Rebuttal ¶227. If the “but-for” EIP is lower than the actual EIP for at least one observation of that student, he or she was “harmed at least once.” Singer Tr. 258:19-259:18; Ex. 26, Singer Supp. Rebuttal ¶59. A student is “harmed on net” if they were “overcharged when summing across all of his or her academic years during the Class Period.” Singer Rebuttal ¶234.

Singer’s in-sample prediction analysis demonstrates the unreliability of his regression and is itself unreliable. First, the analysis shows wildly varying results between years for many students, yet the analysis miraculously yields an identical average annual overcharge for them and nearly every other class member. For example, Singer’s model shows that the challenged conduct harmed a student who attended Cornell from 2018-2021 by \$1,282 in year one, harmed this student

⁶ Singer includes six specifications of his regression with different control variables. He uses the output from specification 6 of his regression to identify impacted class members through his in-sample prediction analysis and to calculate aggregate damages. Singer Am. Rep. tbl. 11; ¶¶255-261, 281; Singer Rebuttal tbl. 7; ¶¶253-256. Specification 6 initially produced a \$1,485 EIP overcharge per student and academic year, Singer Am. Rep. tbl. 11, col. 6, but after defendants’ experts identified more than 60 errors in Singer’s data, he revised that figure to \$1,202, Singer Rebuttal tbl. 6, col. 6. Had Singer accepted three other critiques of his data, he would not have shown an overcharge at all and his results would not be statistically significant. Hill Rebuttal fig. 33; Hill Surrebuttal fig. 8.

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by \$4,030 in year two, and *benefited* this student by \$9,487 in year three, only to have again harmed the student in year four by \$8,983, for a total overcharge of \$4,808 over four years. Stiroh Surrebuttal ¶25 fig. S3.6. This result is not an outlier—Singer finds that 26% of the proposed class had at least one year where the challenged conduct resulted in an *undercharge* and one year with an *overcharge* of more than \$5,000 each. *Id.* ¶25.

Singer’s response essentially concedes his regression model is unreliable. As to the Cornell student, Singer explained that his model showed a \$9,000+ undercharge in the third year because the student “paid” a much lower EIP in year three compared to year two (\$7,739 versus \$19,531), and his model “just could not have predicted that this student would” have received a much lower EIP that year (which was during the challenged conduct). Singer Tr. 271:11-273:6; *see also id.* 270:9-271:10 (“The regression can’t explain why it was so low.”). That is, Singer admits that his model is biased. Bizarrely, Singer claims that his model therefore *underestimates* damages for this student in year three because he attributes the lower EIP to the challenged conduct when it may not have been. *Id.* 273:2-4. But the same logic applies to aberrant *overcharges* too. *See* Stiroh Surrebuttal ¶25. Singer’s “regression can’t explain why” students’ EIPs were too *high* for the same reasons it cannot explain why they were too *low*. Singer Tr. 270:23-24. And Singer’s model “just could not” reliably predict students’ but-for prices either, *id.* 271:11-273:6, which means it cannot reliably assess individual damages. Singer has no principled basis to insist his model cannot predict *undercharges* but can accurately predict *overcharges* and all “but-for” prices for putative class members.

Thus, Singer’s in-sample prediction analysis is fundamentally flawed and mathematically rigged to artificially show harm. *Remien v. EMC Corp.*, 2008 WL 597439, at *3 (N.D. Ill. Mar. 3, 2008) (excluding testimony because “the methods [the expert] employed and the studies he

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made were, indeed, oriented to results the Plaintiffs sought”). This is true because of a critical methodological error. Singer’s regression calculates the difference between a class member’s actual EIP and the hypothetical “but-for” EIP. The “but-for” EIP has two components: (1) the uniform effect the model attributes to the challenged conduct and (2) the regression’s “residual,” which represents unexplained price variation. But by incorporating student fixed effects, Singer mathematically ensures that the residuals for each student’s observation will sum to zero. Singer Tr. 273:16-274:16; Ex. 27, Stiroh Rebuttal App’x 1; Stiroh Surrebuttal ¶21. This technical constraint leads to a predetermined outcome: students with observations entirely during the defendant-schools’ 568 Group membership will *always* show a net harm equal to Singer’s average EIP overcharge multiplied by the number of observations for that student. This approach guarantees a finding of harm, Stiroh Surrebuttal ¶17, meaning it does not even purport to *test* whether all class members were harmed. Singer’s representations to the contrary are misleading at best.

An example illustrates the issue. Singer’s in-sample prediction analysis finds that the student discussed above who attended Cornell from 2018-2021 (while Cornell was a 568 Group member) was “harmed on net” by \$4,808—which is \$1,202 (the generalized overcharge estimate in specification 6 using his amended data) multiplied by four (the number of observations for the student). Stiroh Surrebuttal ¶24, fig. S3.6; Singer Tr. 273:16-274:16 (discussing this example). The same is true for all 921 putative class members who attended Cornell from 2010 to 2013 even though the actual total need-based aid these 921 students received ranged between \$8,615 and \$285,398. Stiroh Surrebuttal ¶17. At Dartmouth and Emory—for whom there is only one year’s worth of data per student (another significant flaw in Singer’s data)—his prediction is that every single proposed class member was harmed by exactly \$1,202 (the generalized overcharge multiplied by one). *Id.* ¶20, fig. S3.5. In all, 85% of proposed class members only have observations

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at defendant schools while those schools were 568 Group members and Singer's in-sample prediction analysis holds that *all* those students were "harm[ed] on net" and in an amount equal to *exactly* the generalized overcharge multiplied by the number of observations for those students. That is true "regardless of the individual characteristics of the student," Singer Tr. 261:18-262:25, the school they attended, or whether they matriculated in 2008 or 2017. This result is wildly implausible and is why Singer conceded it is a "problem" for his analysis. *Id.* 266:4-268:9. It is a "problem" that Singer never solves.

Singer points out that the phenomenon of total overcharges equaling exactly \$1,202 times the number of years in college only applies to his models, like specification 6, that use student fixed effects. Singer Tr. 273:16-274:16. "This would not happen had we not used student fixed effects." *Id.* But specifications 1-3 of Singer's regression do not, in fact, "use[] student fixed effects." Singer Am. Rep. tbl. 11. When asked whether he tested those alternative specifications, however, Singer dissembled: "I did not—well, it may have been performed. I don't know if it was performed, but I certainly didn't offer it up as a measure of impact." Singer Tr. 280:9-16.

What happens when one performs the analysis Singer didn't know if he performed? Only *half* of class members were impacted, Stiroh Surrebuttal n.53; Singer Tr. 281:12-20 ("I can't dispute" that result), far short of the "all or nearly all" plaintiffs need, Singer Rebuttal ¶225.⁷ Thus, Singer's opinion that nearly the entire class was impacted is contradicted by many of his models and is supported only by his rigging of the remaining ones. This too is junk science.

B. Singer's "Opinions" Outside The Scope Of His Expertise Should Be Excluded

Singer also offers opinions outside the scope of his putative economic expertise by (1) restating cherry-picked evidence without any methodology; and (2) musing about defendants'

⁷ Stiroh's analysis is based on specification 3, which is the same as Singer's preferred specification 6 *except* for the student fixed effects. Singer Am. Rep. tbl. 11; *accord* Singer Tr. 281:21-25.

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intent. Because “[t]here is no indication . . . that []he is any more qualified than the average juror to make such [] determination[s],” these opinions must be excluded. *Klaczak v. Consol. Med. Transp. Inc.*, 2005 WL 1564981, at *10 (N.D. Ill. May 26, 2005).

1. Singer’s Recitations Of Cherry-Picked Record Evidence Do Not Constitute An Expert Opinion

When asked what documents he had reviewed in the case, Singer stated, “we’re not just going into the documents and just reading. We’re looking for particular things.” Singer Tr. 328:12-329:5. Those “things” are documents that support plaintiffs’ case. When asked if he ever looked for documents “that contradict [his] opinions,” Singer responded bluntly, “[w]e don’t go look for them[.]” *Id.* 329:6-9. In keeping with this, large portions of Singer’s report “do nothing more than collect and summarize evidence from the record favorable to [plaintiffs.]” *SFG, Inc. v. Musk*, 2019 WL 8353110, at *2 (N.D. Ill. July 31, 2019) (excluding expert reports and testimony). But “[a]n expert cannot simply spout facts and dress them up as opinions.” *Burns v. Sherwin-Williams Co.*, 2022 WL 4329417, at *20 (N.D. Ill. Sept. 18, 2022), *aff’d*, 78 F.4th 364 (7th Cir. 2023). Experts who “omit[] a substantial set of facts from [their] analysis, and instead rel[y] only on what appears to be plaintiff-curated records” must be excluded. *Smith v. Ill. Dep’t of Transp.*, 936 F.3d 554, 558-59 (7th Cir. 2019) (citation omitted).

In particular, Singer’s opinion regarding the “qualitative evidence” that he believes to be “consistent with” the challenged conduct being a price-fixing cartel, summarized in Part II(A), Part II(D)(2), and Appendix 7 of his amended report, consists almost entirely of cherry-picked record evidence stated alongside conclusory “opinions.” *See* Singer Am. Rep. ¶¶125-191; 200-216; *see also id.* App’x 7. This curated recitation of record evidence is particularly egregious considering the vast portions of the record Singer failed to review—for instance, the copious evidence that the only requirement to be in the 568 Group was to be need-blind, with which Singer

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plainly was unfamiliar at his deposition. *Compare* Singer Tr. 344:5-24, *with, e.g.*, Ex. 28, Downs-Burns Tr. 49:13-50:2 (“The only requirement was to be need-blind. So schools—again, schools could do what they want if they were need-blind for admission.”).⁸

The only “opinions” accompanying this more than 80-page recitation of facts in Part II(A), Part II(D), and Appendix 7 are impermissible assertions about defendants’ intent, *see infra*, at 21-22; summary statements that restate with an interpretive gloss the contents of the evidence that Singer has selected, *see, e.g.*, Singer Am. Rep. ¶147 (“documents reflect that 568 Group member schools agreed that a given member would be allowed to deviate from the methodology . . . so long as any such changes increased family contributions.”); or high-level conclusions with no accompanying scientific methodology, *see, e.g., id.* ¶124. A cursory assertion that Singer conducted his analysis “through an economic lens,” *id.* ¶123, does not convert a recitation of cherry-picked record evidence into an expert opinion. Simply put, it “summarizes a bunch of documents, without offering any discernible economic analysis. There is a summary, but there is no value-add.” *Kraft Foods Glob., Inc. v. United Egg Producers, Inc.*, 2023 WL 6248473, at *3 (N.D. Ill. Sept. 19, 2023) (excluding opinion).

2. Singer Cannot Opine On Defendants’ State Of Mind

Singer testifies to defendants’ intent in nearly every aspect of his opinions, despite the fact “[t]here is no indication . . . that [h]e is any more qualified than the average juror to make such a determination.” *Klaczak*, 2005 WL 1564981, at *10. On defendants’ perceptions of themselves relative to other schools: “[I]nstitutions in the relevant market perceive themselves as distinct from institutions outside of the relevant market.” Singer Am. Rep. ¶13(1)(b); *see also id.* ¶¶73, 74, 92. On defendants’ intent with respect to the 568 Group and Consensus Methodology: “Defendants’

⁸ Kim Downs-Burns—not affiliated with any defendant—was chair of the 568 Group’s Technical Committee. Downs-Burns Tr. 10:2-11:15, 18:6-19.

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purpose in establishing the CM was to achieve a consistent formula of need analysis” and “the objective was to reduce the variance.” *Id.* ¶126; *see also* Singer Rebuttal ¶¶47, 52, 201, 213, 274, 293. He also opines about what various schools “concluded” or “adhered to,” and the relative frequency individuals attended meetings. Singer Am. Rep. ¶¶362, 359, 345. Because “[a]n expert’s assertions about another person’s ‘intent’ are neither helpful nor admissible under Rule 702,” these opinions should be excluded. *United States v. Schultz*, 2016 WL 7409911, at *3 (N.D. Ill. Dec. 22, 2016) (collecting cases). A list of paragraphs where Singer offers impermissible state of mind testimony is included in the attached appendix.

C. Singer’s Opinion That The Challenged Conduct Affected “Packaging” Should Be Excluded

Singer opines that the challenged conduct “directly affected” the packaging of financial aid—that is, the percentage mix of institutional grants with loans and work-study. Singer Rebuttal ¶56. But Singer’s opinion is based solely on his own biased “reading of the record,” and not on a reliable methodology. Singer Tr. 41:22-42:20, 43:12-22; *see supra*, at 20-21. Singer claims “qualitative evidence show[s] that Defendants applied the affordability principle,” Singer Rebuttal ¶275, to “limit[] the flexibility that [568 Group] members had in packaging their financial aid awards,” *id.* ¶40. In his amended report, that “evidence” consisted of nothing more than cherry-picked deposition statements from Notre Dame’s Director of Financial Aid, a consulting expert, and a College Board representative. Singer Am. Rep. ¶¶188-191. But Singer ignored the copious evidence showing that there was no agreement on packaging, including the 2017 Consensus Methodology Guidelines, which explained, in a section titled “Introduction – The Consensus Approach to Need Analysis,” that “[a]ll 568 Group schools are free to deal with institutional resource issues through their packaging policies.”⁹

⁹ Ex. 29, PENN568-LIT-00162887, at -891.

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Further, the parties' actions belie such an agreement. In his rebuttal report and during his deposition, Singer claimed that the adoption of no-loan policies by certain schools only after leaving the 568 Group is "consistent with packaging [] having been impacted by the Challenged Conduct." Singer Rebuttal ¶65. But as Singer acknowledged, schools adopted no-loan policies while members of the 568 Group, so "no reasonable person could say" that the 568 Group *prohibited* adopting such policies. Singer Tr. 59:24-60:20. Singer's "reading of the record evidence" that "members of the [568 Group] felt constrained in moving to a no-loan policy," *id.* 41:22-42:20, is thus plainly wrong and contradicted by the record—multiple schools in fact adopted no-loan policies while in the 568 Group. This opinion should be excluded.

D. Singer's Attempt To Define A Market Should Be Excluded

Singer does not apply a reliable methodology to arrive at his proposed market definition, "Elite Private Universities whose undergraduate programs consistently ranked in the USNWR Top 25 during the Class Period." Singer Am. Rep. ¶72. That definition excludes top public universities (who are actually part of the USNWR rankings) and liberal arts colleges with which defendants compete vigorously. It is contradicted by the economic literature Singer cites and his own revealed-preferences analysis, does not find support in his so-called *Brown Shoe* factor analysis, and "ignores" "significant competition" where "competition exists." *In re IBM Peripheral EDP Devices Antitrust Litig.*, 481 F. Supp. 965, 978 (N.D. Cal. 1979). The result, according to Singer: Brown and MIT are closer competitors than Brown and Amherst, while Notre Dame and Michigan do not compete but Notre Dame and Caltech do. These illogical conclusions, drawn from an unreliable methodology, must be excluded. *See In re Live Concert Antitrust Litig.*, 863 F. Supp. 2d 966, 988-89 (C.D. Cal. 2012).

First, the literature Singer cites undermines his definition. *See, e.g.*, Long Rebuttal ¶284. Gordon Winston, for example, explicitly includes public universities in the relevant market when

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he explains that “[a]t the top of the [higher education market] hierarchy are the schools well-endowed with donative wealth—large endowments and expensive plants in the case of private schools *and, additionally, large government subsidies in the case of public schools*—that offer expensive and high quality education at highly subsidized prices and that therefore disproportionately attract high quality students.”¹⁰ That also contradicts Singer’s assertion that Elite Private Universities’ large endowments set them apart from top public universities; the proper comparison would consider government subsidies for the latter, which Singer does not. Singer Am. Rep. ¶116, tbl. 8. It also ignores that many top-ranked public universities have large endowments.¹¹

Singer next errs in asserting that “Defendants regard themselves and a select few other schools . . . as peers.” Singer Am. Rep. ¶74. As Singer admitted, that conclusion is based on statements and documents from less than “half of the schools in the 568 Group,” Singer Tr. 369:25-370:4, and when confronted with record evidence to the contrary, he admitted he “did not consider,” *id.* 372:12-17, or did not “recall seeing” it, *id.* 371:3-5. For example, internal Emory documents show that UC-Berkeley, UNC-Chapel Hill, and the University of Virginia (all public) ranked among the schools to which it “most frequently [lost] admitted students.”¹² Some of the record evidence Singer did consider supports his definition only if the factfinder agrees with his inferences. For instance: A slide in a Penn presentation describes “four sets of competitors,” including “top competitors” (Harvard, Yale, Princeton, Stanford, and MIT) and “public flagships”

¹⁰ Ex. 30, Gordon C. Winston, *Subsidies, Hierarchy and Peers: The Awkward Economics of Higher Education*, 13 J. HIGHER EDUC. 13, 27 (Winter 1999) (emphasis added).

¹¹ See Ex. 31, Sarah Wood, *15 National Universities With the Biggest Endowments*, USNWR (Oct. 2, 2023), <https://www.usnews.com/education/best-colleges/the-short-list-college/articles/10-universities-with-the-biggest-endowments> (Texas A&M: \$17.2 billion; Michigan: \$17.1 billion; Virginia: \$9.7 billion).

¹² Ex. 32, Emory_568Lit_0058886 at -951-952.

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(UC-Berkeley, UCLA, University of Michigan, and University of Virginia).¹³ Singer takes the “top competitors” from this slide, but does not include “public flagships” because “by using the word top competitors [it] is a fair inference that they [Penn] consider those to be competitors.” Singer Tr. 375:9-16. Of course, it is not for Singer to decide what “fair inference[s]” from record evidence are, *see supra*, at 20-21, and his inference is on its face unfair. Cherry-picking parts of documents while ignoring contradictory evidence is not a reliable methodology.

Nor is Singer’s purported *Brown Shoe* analysis reliable “proof of the existence” of his market. Singer Am. Rep. ¶64. The *Brown Shoe* factors are “practical indicia” of the existence of a market, such as “industry or public recognition,” “the product’s peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors.” *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962). Singer’s *Brown Shoe* “analysis” considers the allegedly distinct prices schools in and out of his market charge (Singer Am. Rep. ¶83); an empirical “peer analysis” (*id.* ¶¶85-93); differences in the distances students traveled to attend schools (*id.* ¶¶94-100); and a consumer “revealed preferences” analysis (*id.* ¶¶101-107). His application of each is unreliable or incomplete.

As for distinct prices, Singer does not apply a reliable methodology to conclude that defendants “charge significantly higher prices for their product relative to all public universities and to many other private universities.” Singer Am. Rep. ¶83. At his deposition, the only explanation Singer could offer was that “the difference [in price] should be economically significant. It should be a material difference; as they are in the Duke-UNC example.” Singer Tr. 392:10-17. In other words: “I know it when I see it.” His distinct-prices conclusion is based entirely on the unsupported claim that “public universities do not need to discount their (already relatively low) prices,”

¹³ Ex. 33, PENN568-LIT-00089925 at -9951–9952.

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Singer Am. Rep. ¶73, and one—just one—actual price comparison between Duke University and the University of North Carolina, *id.* ¶83. Singer makes no other concrete price comparisons, let alone a systematic price comparison between schools in his proposed market and top public universities or top liberal arts colleges. *See id.* ¶83. In fact, there are lots of similar prices: “For example, . . . a federally-aided student with a family household income between \$48,000 and \$75,000 would have paid an average net price of \$11,409 at Georgetown and \$11,544 at Penn . . . and \$14,884 at UVA.” Long Rebuttal ¶92. Singer’s conclusion that defendants meet the “distinct prices” *Brown Shoe* factor because they charge “significantly higher” prices is therefore not the result of a reliable methodology. He provides no principled definition of when prices are distinct enough to show a school is out-of-market, and he conducts *no* systematic analysis of price differences. Liberal arts colleges—which price like other private universities, Long Rebuttal ¶92 & n.184—are unmentioned.

Singer consistently fails to consider top liberal arts colleges when doing so is unhelpful to his desired result. Sometimes he includes a comparison. *See, e.g.*, Singer Am. Rep. tbl. 3 (peer data), tbl. 5 (distance traveled from home), tbl. 7 (revealed preferences ranking). Other times he does not. *See, e.g.*, Singer Am. Rep. ¶83 (price comparison), tbl. 8 (endowment per student), tbl. 9 (faculty quality). Singer does not explain why, but presumably those comparisons would undermine his proposed market definition—for example, at least some liberal arts colleges have larger endowments per student than some defendants. Singer Tr. 384:3-12; *see also* Ex. 34, David Leonhardt & Ashley Wu, *The Top U.S. Colleges with the Greatest Economic Diversity*, N.Y. Times (Sept. 7, 2023), <https://www.nytimes.com/interactive/2023/09/07/magazine/college-access-in-dex.html> (noting that Amherst and Williams, to give just two examples, have endowments per student larger than many schools in the alleged market).

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Singer’s supposedly empirical peer analysis fares no better. Singer claims to “bolster the conclusion that Defendants perceive” other schools in his proposed market as peers, based on selective documents from fewer than half the defendants, *see supra*, at 24-25, with an “empirical[]” analysis, Singer Am. Rep. ¶85. To do so, he uses two public databases to calculate for each school a “peer/reverse-peer ratio,” which is a ratio of how many schools they listed as a peer to how many other schools listed that school as a peer (“reverse-peer”). *Id.* ¶86. Singer claims this ratio is “a measure of quality,” *id.* ¶89, and that “the peer-to-reverse-peer ratio measure of quality falls” when adding public schools and liberal arts colleges because the average ratio increases from 0.52 to 0.62, “reinforcing the conclusion that the different groups of institutions are viewed as belonging to separate markets.” *Id.* ¶90. To support his unexplained opinion that a lower ratio indicates higher quality, he points to Harvard’s low ratio of 0.11. *Id.* ¶89. But Berkeley’s ratio is even lower (0.09), and Stanford and MIT’s ratios are higher than Cornell’s, Duke’s, and Emory’s, *id.* Singer makes no attempt to square those facts with his assertion.

Finally, Singer’s own analysis of students’ preferences contradicts his market definition. His “revealed preferences” analysis looks at “students who compare one school at which they are admitted to another such school, in a ‘pairwise’ fashion.” *Id.* ¶101. That is important because “[t]he relevant market here . . . is where students decided to *enroll*, once they know their options.” Singer Rebuttal ¶24. This analysis, Singer acknowledges, “avoids any subjective weighting and/or criteria selection” (as the USNWR rankings do) and “allows for a combined ranking of all institutions.” Singer Am. Rep. ¶101. That combined ranking shows that students preferred three public universities over 13 schools in Singer’s proposed market and 5 liberal arts colleges over 2 schools in Singer’s proposed market. Singer Am. Rep. tbl. 7. This evidence of “effective competition between [elite private universities and public and liberal arts schools]” “necessarily implie[s]” a

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product market “embracing both.” *United States v. Cont’l Can Co.*, 378 U.S. 441, 456-57 (1964).

Nevertheless, Singer concludes that “according to students’ own revealed preferences, there is *minimal evidence* that the relevant market” is broader than “Elite Private Universities.” Singer Am. Rep. ¶107. That—again—is pure *ipse dixit*. At his deposition, Singer’s only explanation of why evidence of consumers’ actual preferences is “minimal” was that the purpose of the analysis was “to see whether the preference rankings of the defendants move down materially [when adding public universities and liberal arts colleges] and they don’t.” Singer Tr. 366:16-367:11. That is nonresponsive and misses the point: According to consumers in the market, multiple public universities and liberal arts colleges rank higher than multiple schools in his proposed market—clear evidence that those schools compete with the ones in Singer’s proposed market. Singer has no basis to ignore that fact.

II. Bulman’s Opinions And Testimony Should Be Excluded In Full

Bulman offers three opinions: (1) defendants experienced substantial endowment growth; (2) defendants spent less on financial aid out of their endowment returns once the Class Period began; and (3) defendants could have spent more on financial aid. Ex. 35, Bulman Rep. ¶9. Bulman’s second opinion should be excluded because his analysis relies on an unreliable methodology—indeed, even *he* has not used the method he employed here when analyzing endowments while not on plaintiffs’ payroll. His two other opinions should be excluded because they are irrelevant factual summaries that would confuse a jury; they are not expert opinions.

A. Bulman’s Regression Analysis Is Unreliable And Irrelevant, As Shown By His Prior Academic Work

Bulman’s second opinion depends on a regression analysis that examines the relationship between (i) what he calls “excess returns” from defendants’ endowments and (ii) financial aid. Ex. 36, Bulman Tr. 128:13-129:3. He purports to find a change in this relationship after the alleged

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conduct began and contends that this finding is “consistent” with the challenged conduct. Bulman Rep. ¶9(b). Bulman’s regression analysis is unreliable and irrelevant and should be excluded.

Bulman’s regression focuses on what he calls “excess returns,” but his reports make clear that he is interested in a completely different variable: endowment levels.¹⁴ He never contends that “excess returns” directly affect financial aid. Instead, he hypothesizes that “institutions with high investment returns could use their enhanced wealth to reduce their list price or offer more generous institutional aid to attract students,” Bulman Rep. ¶32, and that “excess returns might increase student aid . . . through greater endowment levels,” Ex. 37, Bulman Rebuttal ¶62. During his deposition, he also asserted repeatedly that excess returns “feed into endowment levels.” Bulman Tr. 130:10-18, 179:9-18, 180:2-16, 196:1-13.

Bulman should have studied the relationship he intends to present to the jury—i.e., the relationship between endowment levels and financial aid. And he could have. His only writing on endowments is a 2022 paper titled “The Effect of College and University Endowments on Financial Aid, Admissions, and Student Composition.” Bulman Tr. 30:11-31:1; *see* Ex. 38, Bulman Dep. Ex. 7. That 2022 paper, which led to Bulman’s retention in this case, uses an instrumental variable strategy to measure how endowment levels—not “excess returns”—affect financial aid. Bulman Tr. 14:10-16, 242:15-19. An instrumental variable strategy is what makes it possible to analyze the correlation between variables like endowment levels and financial aid that have an endogenous relationship (i.e., causation between them could flow in either direction). *Id.* at 242:2-7; Bulman Dep. Ex. 7. Surprisingly, although Bulman seeks to examine the same question here,

¹⁴ Bulman defines “excess returns” as returns that “exceed the target spending rate from the endowment and inflation.” Bulman Rep. ¶33. But regardless of defendants’ actual spending patterns, he uses “the same effective spending rate of 4.7% for all defendants,” based on a survey of institutions with large endowments. *Id.* ¶35.

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he departed from his prior methodology. Bulman Tr. 244:3-9, 246:1-4.

During his deposition, Bulman offered two reasons for not implementing his 2022 methodology. Bulman Tr. 243:23-244:2. Neither withstands scrutiny. First, he claimed that he “wanted to present . . . the direct effect of the investment returns on the outcomes of interest.” *Id.* 244:3-14. But this claim is at odds with his repeated emphasis that excess returns “feed into endowment levels.” *See e.g., id.* 196:1-13. Second, he stated that his approach “does not involve me explaining” his 2022 methodology “to non economists.” *Id.* 243:23-244:2. But experts “cannot waltz into the courtroom and render opinions unless those opinions are based upon some recognized scientific method.” *Clark v. Takata Corp.*, 192 F.3d 750, 759 n.5 (7th Cir. 1999). The same standards apply in court as in academia.

In a familiar trend, the real reason Bulman did not employ his 2022 methodology appears to be that it did not provide the desired results. Applying Bulman’s 2022 approach here, the results contradict Bulman’s “findings.” Hill Rebuttal ¶300. Bulman does not dispute this analysis. Bulman Tr. 246:14-23. *Daubert* “requires the district judge to satisfy himself that the expert is being as careful as he would be in his regular professional work outside his paid litigation consulting,” *Sheehan v. Daily Racing Form, Inc.*, 104 F.3d 940, 942 (7th Cir. 1997); *see City of Rockford v. Mallinckrodt ARD, Inc.*, 2024 WL 1363544, at *10 (N.D. Ill. Mar. 29, 2024) (finding economic expert’s model unreliable because it did not exhibit the necessary intellectual rigor, “especially as compared to [the expert’s] published works”). The unexplained inconsistency between Bulman’s professional work and his paid testimony undermines the reliability of his opinion and creates the kind of “junky” analysis that *Daubert* forbids. *See Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 159 (1999) (Scalia, J., concurring).

B. Bulman’s Remaining Opinions Are Not Based On Any Specialized Knowledge, Are Irrelevant, And Risk Confusing The Jury

Bulman’s remaining opinions, which concern defendants’ endowment growth and investment returns (first opinion) and other ways defendants supposedly *could have* stewarded their endowment assets (third opinion), should also be excluded. Neither of these opinions is based on any specialized knowledge or expertise. They are also irrelevant and risk confusing the jury, as no aspect of the alleged agreement concerns endowments. Bulman Tr. 61:17-24.

Defendants’ “Substantial” Investment Returns and Endowment Growth: Bulman’s first opinion is that “Defendants experienced substantial investment returns and endowment growth.” Bulman Rep. ¶9(a). Bulman bases this opinion on “some basic available data regarding the size and growth of defendants’ endowments, and their investment returns on these endowments over the past three decades,” which he presents in Tables 1-6 of his opening report. *Id.* ¶¶23-31. Bulman adjusts the data for inflation but performs no other analysis. Bulman Tr. 77:10-19.

This opinion is not based on any specialized knowledge. Any layperson would understand from the underlying data that defendants’ investment returns have grown over time. Bulman’s report thus “attempt[s] to put the weight of expert testimony behind an inference that does not appear to be based upon anything more than . . . common-sense reasoning.” *Poulter v. Cottrell, Inc.*, 2014 WL 5293595, at *4 (N.D. Ill. June 24, 2014) (excluding aspects of engineering expert’s testimony where he did not “employ his specialized engineering knowledge in arriving at his conclusion”). For this reason alone, Bulman’s first opinion should be excluded.

Bulman’s first opinion is also irrelevant because defendants’ historical endowment levels and investment return rates have no relation to any of the six components of the “challenged conduct.” Bulman Tr. 61:17-24. Because this opinion will not “assist the trier of fact to understand or determine a fact in issue,” it should be excluded. *See Daubert*, 509 U.S. at 592.

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Finally, Bulman’s first opinion risks confusing the jury. *Daubert*, 509 U.S. at 594 (noting the applicability of Rule 403 to expert testimony). An opinion that defendants’ endowment growth and investment growth were “substantial” invites the jury to disregard the issue of liability and base its decision solely on defendants’ resources. Given that this first opinion has little, if any, probative value, it should be excluded.

Defendants’ Capacity to Spend: Bulman’s third opinion is that defendants had “sufficient endowment resources to have spent more on institutional aid, and thus reduced effective institutional prices, while maintaining the purchasing power of their endowments.” Bulman Rep. ¶62.

Like Bulman’s first opinion, this opinion does not come from any specialized knowledge, is irrelevant to the issues in the case, and risks confusing the jury. Perhaps wisely, plaintiffs have not offered Bulman as an industry expert; he readily admits that he has no experience in managing a college or university endowment. Bulman Tr. 31:2-24. Nor did Bulman review depositions where plaintiffs asked defendants’ employees about endowments. *Id.* 48:12-18. As a result, Bulman completely disregards the restrictions and limits—including legal ones—on defendants’ ability to devote additional resources to financial aid. Ex. 39, Yermack Rep. ¶¶40-46; Ex. 40, Ammon Tr. 35:5-22, 47:25-51:6. In addition, whether defendants *could* have deprioritized other aspects of the college experience to increase financial-aid spend by even more than the astronomical amount it increased during the relevant period is not evidence of anything, and is certainly not evidence of a price-fixing conspiracy. Like the rest of Bulman’s opinions, this opinion should be excluded.

III. Mora’s Opinions And Testimony Should Be Excluded In Full

Mora offers opinions concerning the ways she says defendants are “akin” to for-profit businesses, how and why they offer financial aid, how they compete with one another, and how they can and do manage revenues and endowments. But Mora is unqualified to offer these opinions and has done nothing to buttress her lack of experience with study or analysis of the record. Her

opinions lack relevance, will not assist the jury, and should be excluded.

How Defendants Are “Akin” to For-Profit Businesses: The basis for Mora’s opinion that defendants are “akin” to for-profit businesses is that she believes defendants are “like Harvard” (where she was CFO for two years), which she contends shares certain operational attributes with for-profits such as large numbers of employees, multiple departments, and complex governance structures. Ex. 41, Mora Rep. ¶¶5(a), 20-31. Mora acknowledges many other nonprofits also share these attributes, and she recognizes major differences between defendants and for-profits, including that defendants are not profit-motivated. Mora Tr. 90:10-20, 92:10-93:17, 96:3-22. Boiled down, Mora’s opinion is that defendants are similar and dissimilar to some for-profits and some nonprofits. *See, e.g.*, Ex. 42, Mora Rebuttal ¶¶4-7. This is hardly an opinion at all, and in any event, is far afield from any pertinent issue and thus does not “assist the trier of fact to understand the evidence or to determine a fact in issue.” *Myers v. Ill. Cent. R. Co.*, 629 F.3d 639, 644 (7th Cir. 2010) (citation omitted).

Even if this empty opinion were somehow relevant, Mora would be unqualified to offer it. A robust academic field exists concerning corporate structures and governance, and individuals who engage with it—like economists specializing in the study of the corporate form and governance—can be deemed qualified to provide testimony on these matters. But Mora has zero expertise in this field. She has no relevant educational background; in fact, her only formal learning was a single class on a tangential issue (nonprofit accounting) that she attended roughly *forty years ago*. Mora Tr. 65:18-66:23, 69:9-13. She likewise has no relevant work experience. *See id.* 39:16-40:18, 42:21-43:6. And she cannot point to any literature relying on the attributes she says identify a company as akin to a for-profit. *Id.* 101:18-102:8. That explains why her method of highlighting attributes did not involve reviewing literature or performing a focused analysis, and instead

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consisted of randomly picking those that “seem[ed] to [her] to be the most obvious.” *Id.* 91:8–16.

This opinion also depends on Mora knowing which attributes defendants possess—but the extent of her knowledge is a vague recollection of a handful of “ad hoc” conversations she had more than 15 years ago. Mora Tr. 53:17-56:18. She performed no individualized analysis of each defendant (and no analysis whatsoever where she did not have a “conversation”), instead surmising that defendants are “like Harvard,” the only school that has ever employed her, based on a review of 12 record documents and 2 deposition transcripts. Mora Rep. App’x D. *Daubert* requires more. *See Pursley v. City of Rockford*, 2024 WL 1050242, at *6 (N.D. Ill. Mar. 11, 2024).

The Purposes of Financial Aid: Mora offers her belief that financial aid is not *purely* “altruistic” because it “is important for maintaining excellence and prestige” and allows defendants to “secure acceptance from the most gifted students to thereby maximize endowment growth over time.”¹⁵ Mora Rep. ¶5; Mora Tr. 222:1-9. Perhaps that was her perspective at Harvard from her removed perch in research administration or as CFO. But this is not an opinion that makes any fact at issue more or less likely to be true (other than perhaps its implicit concession that financial aid is at least in part altruistic),¹⁶ and Mora has no relevant experience to offer it, having never held a financial aid job, never set a financial aid policy, and never studied financial aid or the

¹⁵ She also believes, however, that these are not goals of universities in and of themselves, but rather consequences of defendants advancing their educational missions and trying to provide access to students who cannot otherwise afford to attend. *See* Mora Tr. 222:1-13, 234:17-236:8.

¹⁶ If this is meant to aid plaintiffs’ argument that the *per se* rule should apply because defendants have “revenue maximizing” purposes, it fails. This argument misreads *United States v. Brown University*, 5 F.3d 658 (3d Cir. 1993), which observed that if conduct is “altruistic” rather than “revenue maximizing,” that urges applying the rule of reason; it does not stand for the proposition that *per se* analysis applies whenever a defendant is a revenue-maximizing entity. *See Choh v. Brown Univ.*, 2024 WL 4465476, at *7 (D. Conn. Oct. 10, 2024). In any event, Mora testified she does not believe defendants engage in “revenue maximizing.” Mora Tr. 22:7-15 (“Q: Were you asked at any point to offer your views or provide any analysis regarding whether defendants have as a purpose or a primary purpose to maximize revenues? A: I was It’s not on here because I did not agree with the idea that maximizing revenue was a goal.”).

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economics of higher education. Mora Tr. 40:19-41:15, 42:8-15, 43:7-11, 45:4-46:19. Nor has she done any analysis to bolster her dearth of experience—her evidence is “anecdotal,” and she has neither studied why defendants or others award financial aid, nor reviewed evidence or literature to conclude aid imbues “loyalty” causing recipients to become significant donors. *Id.* 237:5-238:1.

Budgets/Endowments and Competition: Mora’s opinions that defendants have “flexibility” to manage and spend “revenues and endowment earnings” and “compete with each other” in certain ways, Mora Rep. ¶5, suffers the same infirmities. Mora is unqualified: her opinions about defendants’ budgets and endowments rely almost entirely on “ad hoc” conversations she cannot today recall with specificity, *see* Mora Tr. 39:3-8, 53:9-56:18. Meanwhile, no methodology fills the void of her scant experience. To form her 25 paragraphs of opinion on defendants’ various revenue streams, *see* Mora Rep. ¶¶32-57, Mora “did not undertake an analysis for the 17 Defendants” of the availability, size, or flexibility of any revenue stream for any defendant. Mora Tr. 161:10-163:11, 164:15-165:4. Despite opining on how endowment returns function as a revenue stream, Mora did not review any information about the terms of any restrictions on any of the endowed funds managed by defendants, *id.* 194:21-195:2.

At best, Mora can tell us what Harvard’s fiscal practices were in the mid-aughts. That has nothing to do with this case. Her opinions must be excluded.¹⁷

CONCLUSION

The Court should exclude Singer’s, Bulman’s, and Mora’s opinions and testimony in full.

¹⁷ Mora’s opinions have nothing to do with class certification, and her “opinion” that her analyses are “common to the proposed Class” is *ipse dixit* that likewise must be excluded. *See, e.g., Weidman v. Ford Motor Co.*, 646 F. Supp. 3d 928, 935 (E.D. Mich. 2022).

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CERTIFICATE OF SERVICE

I hereby certify that on this 16th day of December, 2024, I electronically transmitted the public version of the foregoing document to the Clerk's Office using the CM/ECF System and caused the version of the foregoing document filed under seal to be transmitted to counsel of record by email.

Dated: December 16, 2024

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